

ABSTRACT

A method and system for providing a magnetic element that can be used in a magnetic memory is disclosed. The magnetic element includes pinned, nonmagnetic spacer, and free layers. The spacer layer resides between the pinned and free layers. The free layer can be switched using spin transfer when a write current is passed through the magnetic element. The magnetic element may also include a barrier layer, a second pinned layer. Alternatively, second pinned and second spacer layers and a second free layer magnetostatically coupled to the free layer are included. At least one free layer has a high perpendicular anisotropy. The high perpendicular anisotropy has a perpendicular anisotropy energy that is at least twenty and less than one hundred percent of the out-of-plane demagnetization energy.